CROWN CAPITAL ENTERPRISE LIMITED

WANCHAI, HONG KONG

Application of RJSeal™
Baoer Street,
Beidaihe, Hebei,
Peoples Republic of China

June 2006

TS^2 Consulting Inc.
Lamma, Hong Kong

CROWN CAPITAL ENTERPRISE LIMITED

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June 2006

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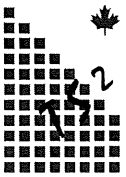

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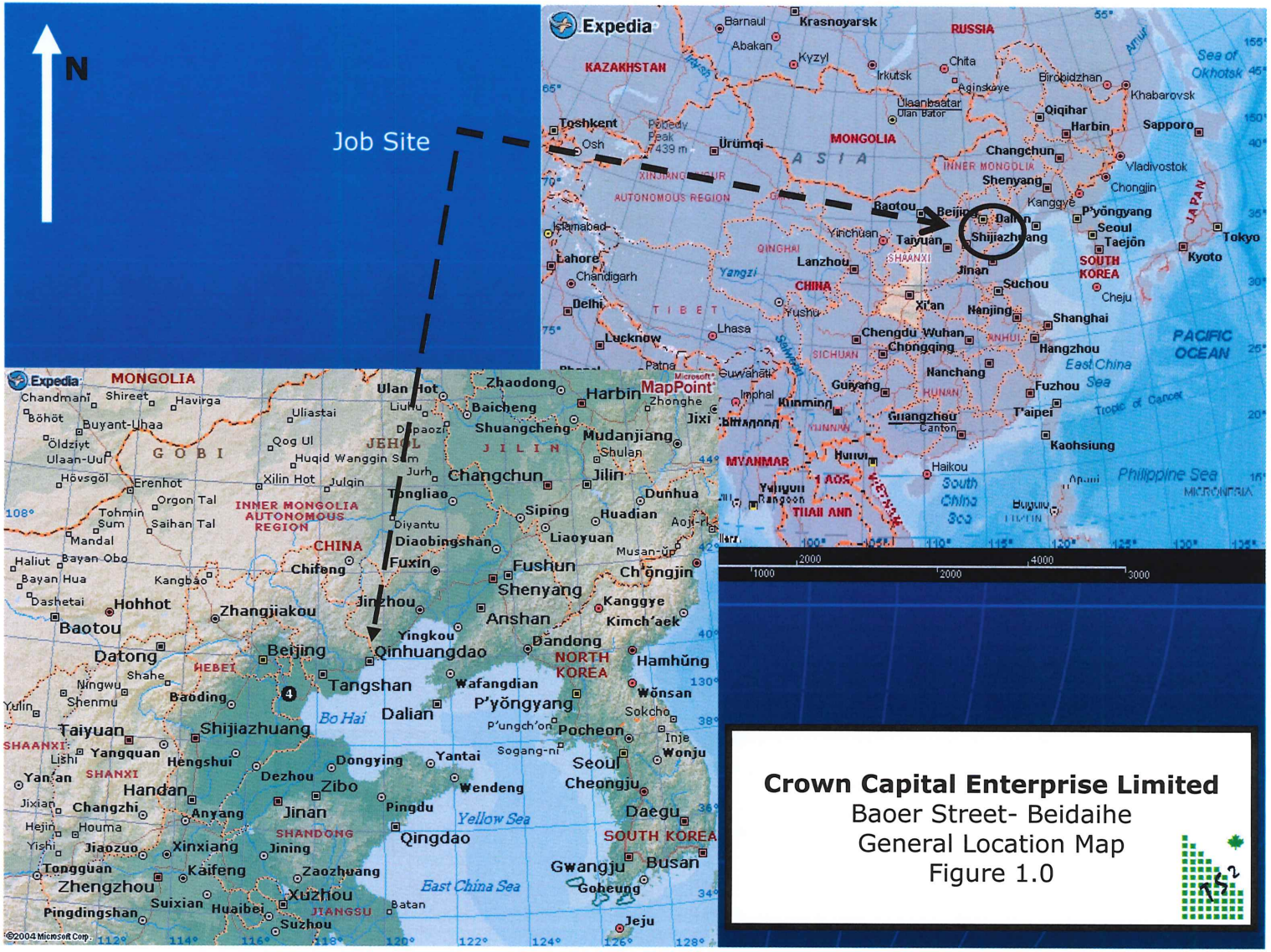
1.0 INTRODUCTION

Crown Capital Enterprise Limited of Hong Kong initially entered into a contract with the Qinhuangdao City Construction Investment Inc. (QICIC) of the City of Qinhuangdao, Hebei Province, China in October 2003. The arrangement led to the analysis of the performance of RJSeal™, a sealer/rejuvenator for one-year old asphalt pavement on Hong Qing Lu. This was a precursor to further work in 2004, on newly-paved streets, primarily in proximity to the newly constructed Olympic Stadium. In 2005 the work was extended to include newly-paved streets in proximity to the North (primary) Train Station. Again in 2006 the work re-commenced on streets in QinHuangDao city and also on Baoer Street in Beidaihe, some 15 kilometres south of QinHuangDao.

Hebei Province is situated to the north of the Yellow River (HuangHe) at its confluence with the Sea of Bohai. Henan, Shanxi, Shandong and Liaoning Provinces as well as Inner Mongolia border Hebei Province. Hebei has seen a major growth in the highway system, in recent years, due to a government drive to build national highways linking Beijing and TianJin with major cities in the adjoining provinces and the massive increase in the world export trade. Beidaihe lies some 250 kilometres east of Beijing and some 100 kms northeast of TianJin. The capital city of Hebei Province is Shijiazhuang with a population of approximately 3 million. See figure 1.0 for a map showing the location of Beidaihe and Hebei Province. The majority of the area lies at 10 to 20 metres in elevation, on the extensive coastal plain that borders the Sea of Bohai. The regions' latitude (39 degrees north), means that there are four seasons, with temperatures ranging from 45 Celsius in the long, hot summer to minus 15 Celsius in the short winter. Their is no rainy season per-se, just thunderstorms and these occur primarily in June thru August, but can extend into September.

In the immediate Beidaihe area, there are hills, with exposures of weakly cemented fine-grained sandstone. The asphalt in the area is manufactured from imported materials, which is comprised of crushed and screened sandstone and diorites hauled in from quarries elsewhere in Hebei Province, as well as washed gravels from the various rivers. The bitumen binder for the asphalt is sourced from various locations. Since Hebei Province borders the Sea of Bohai, the possibility of bitumen being sourced from offshore is a distinct possibility so refineries in Singapore and the like should not be forgotten.


N
Job Site
Expedia
MapPoint
Crown Capital Enterprise Limited
Baoer Street- Beidaihe
General Location Map
Figure 1.0

2.0 CO-OPERATIVE PROGRAM

The intent of the arrangement with the City of QinHaungDao is to demonstrate RJSeal™ and subsequently allow analysis of the performance of RJSeal™ on a variety of asphalt surfaces. A demonstration was undertaken on Hong Qi Lu, in the central core of the city of Beidaihe, on October 15 and 16, 2003. Subsequent to the demonstration on Hong Qi Lu, interest was generated in treating a newly laid asphalt pavement with significant water penetration problems on Ying Bin Lu. This led to the an agreement to apply RJSeal™ to the entire portion of this street, which stretched some 2.3 kilometres northwards from JianShe Road through Gang Cheng Road and Yan Shan Road, terminating at a park. Ultimately this has resulted in additional newly paved streets being treated with RJSeal™ throughout the balance of 2004 and in 2005. This report pertains to the application of RJSeal™ on Baoer Street in Beidaihe, some 15 kilometres south of QinHuangDao, which is the summer retreat for many of the communist party big wigs from Beijing.

Maintenance of the streets in Beidaihe is the responsibility of the City of QinHuangdao.

3.0 RJSeal™

RJSeal™ is a proprietary product that is supplied by Crown Capital Enterprise Limited of Wanchai, Hong Kong. RJSeal™ has been proven in numerous applications in North and South America and recently in China to rejuvenate asphalt pavement at various stages of its life and economically extend the life of the pavement. RJSeal™ is a three component, asphalt sealer rejuvenator that is comprised of Coal Tar, Coal Tar Oils and Petroleum Solvents.

3.1 PRIOR EXPERIENCE

Refer to Appendix A for a copy of the brochure that outlines the experience with RJSeal™ at various locations in North America and South America as well as China. Further information is available from Crown Capital Enterprise Limited. RJSeal™ has been used at numerous airports in North and South America, as well as highways in Alberta, Canada; Cearo State, Brazil and other locations in the U.S.A. Since 2000, RJSeal™ has been demonstrated successfully at over sixty (60) locations in China and over sixty five (65) commercial-scale applications have taken place at various locations, including Beijing and Tangshan in Hebei Province as well as Shanghai, ShenYang, ChangChun, Harbin and Kunming.

4.0 TEST PROGRAM

Since Hebei Province is located in a semi-tropical climate (Latitude: 39 North) at a low altitude (10 to 20 metres), it's a demanding setting for asphalt, given the year round warm climate (extremes of 45 Celsius in summer and minus 5 Celsius in the winter) and intense exposure to ultraviolet radiation, all which contribute to the oxidation and breakdown of the asphalt binder.

Hebei has the second greatest concentration of highways in China (after ShangDong), with some 10,000 kms of National and Provincial highway. Qinhuangdao is responsible for approximately 100 kms of streets in Beidaihe and other neighbouring communities

The city of Beidaihe has an extensive network of roads and the relatively short life of the asphalt surface, accordingly it is definitely interested in determining how to economically extend the life of the asphalt road surface. To this end, the Qinhuangdao Civic Construction Department has agreed to try RJSeal™ on Baoer Street, near the northern train station of Beidaihe. See Figure 4.0, showing the location of this street with respect to Beidaihe and Hebei

On October 20, a test strip in the westbound, service road of the Baoer Street (four lane street with service road on each side separated by a median), was treated with RJSeal™. The test strip with respect to the Application portion of the street is graphically shown in figure 4.1, which follows.

Subsequent inspection of the test strip, showed that the trial application rate of 4.0 m^2/kilogram was a adequate at this location. The portion of Baoer Street that had RJSeal™ applied was at the following geographic location:

Table 4.1 Geographic Location		**Baoer Street**	
System		**Northing**	**Easting**
West End of RJSeal™ Application	Geographic (deg, min)	39^0 57.712'	119^0 35.192'
	Universal Transverse Mercator Grid (metres) 50S	4426745	0720922
East End of RJSeal™ Application	Geographic (deg, min)	39^0 56.480'	119^0 35.362
	Universal Transverse Mercator Grid (metres) 50S	4424472	0721230

The portion of Baoer Street that was treated with RJSeal™, commenced at DongJin Street and ran south from the intersection down to the sea shore.

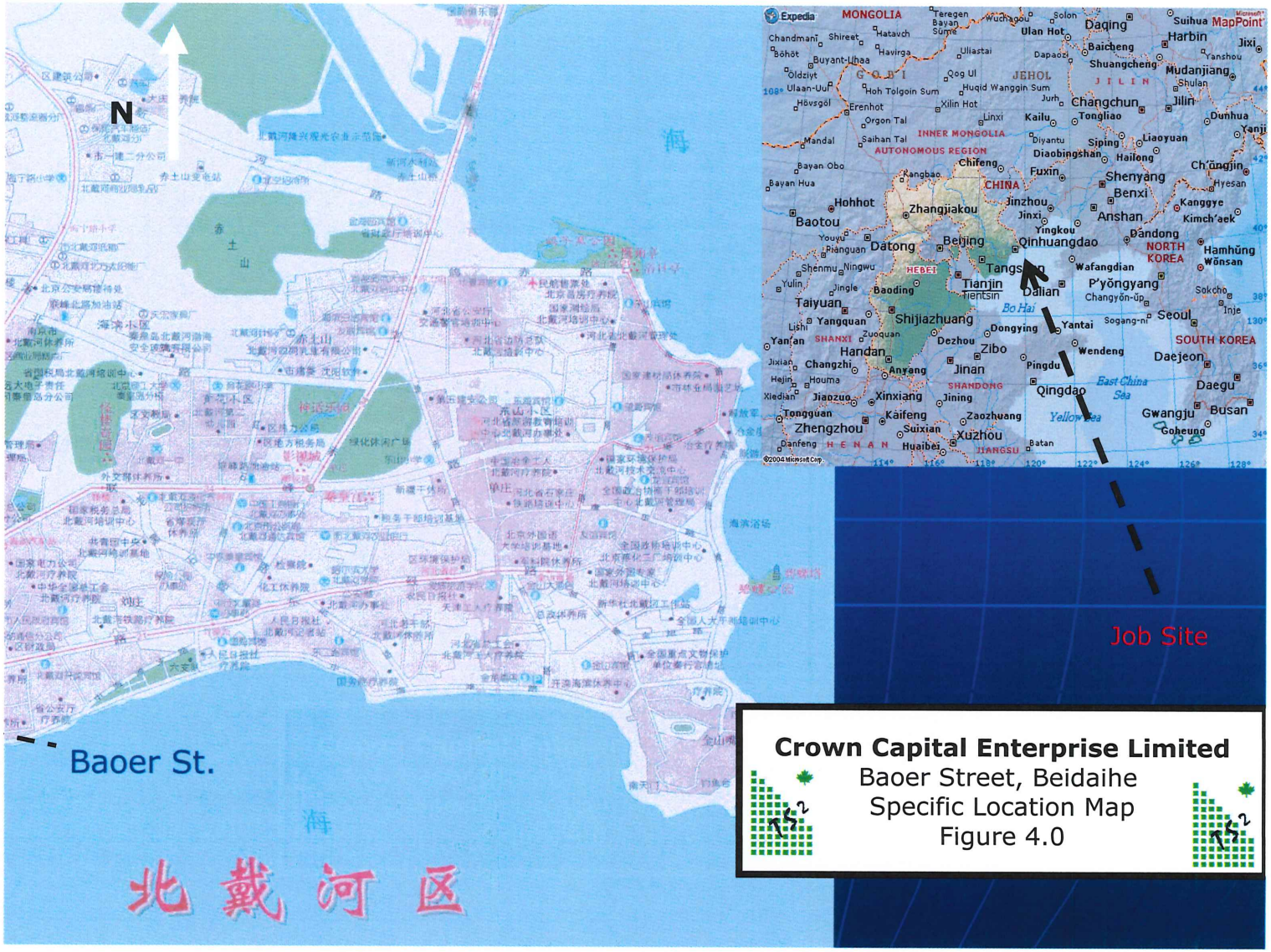

N
Baoer St.
北戴河区
Job Site
MONGOLIA
CHINA
INNER MONGOLIA AUTONOMOUS REGION
HEBEI
SHANXI
SHANDONG
JIANGSU
HENAN
NORTH KOREA
SOUTH KOREA
Beijing
Tianjin
Qinhuangdao
Dalian
Shijiazhuang
Taiyuan
Zhengzhou
Jinan
Qingdao
Seoul
Daejeon
Daegu
Busan
Gwangju
Bo Hai
East China Sea
Yellow Sea
Crown Capital Enterprise Limited
Baoer Street, Beidaihe
Specific Location Map
Figure 4.0

Figure 4.1 Test Strip at Application Site

Work commenced on the Application section at 6:00 am on June 1, on a sunnyy day, where the mid-day temperature reached 23 Celsius. There is a slight camber to the streets, which causes water to run off toward the shoulder, rather than puddle on the road. The asphalt surface on Baoer Street, was reputedly less than one month old (2006 vintage). No significant oil spills were observed, just the occasional drop of transmission oil, crankcase oil or hydraulic fluid. The asphalt pavement surface was not worn due to traffic wear. There was no aging and oxidation of the bitumen. There were cold joints between the parallel mats which were susceptible to water penetration. The entire portion of the treated street was composed of asphalt pavement that was purportedly 15 centimetres thick and underlain by a gravel base, which was on a compacted silty-clay, sub-grade.

Details of the application are summarized in the table that follows:

Table 4.2		**Details on RJSeal™ Application on Baoer Street**								
Day	Work Time	Work Time (hrs)	Total Area m^2	RJSeal™ Applied			Application Rate			
				US gals	Litres	Kgs	USGal /yd^2	Litres /m^2	m^2 /Litre	m^2/Kg
1-Jun	6:00-16:00	10.0	5,750	374	1,415	1,500	0.054	0.26	4.06	3.83

Ambient temperatures at the commencement of work on June 1, at 6 am were in the 15 Celsius rnge and rose to 24 degree Celsius by mid-afternoon, with humidity in the 60% range. The entire work area was treated with copper slag at an application rate of 0.23 kgs/square metre, immediately after the application of RJSeal™. Photos showing the application of RJSeal™ follow in figures 4.2, 4.3 and 4.3 on the following pages.

Figure 4.2 Typical Application Procedure

Figure 4.3 Copper Slag Application

Figure 4.4 Finished Surface

4.1 RJSeal™ Testing

To date the comparison of the asphalt treated with RJSeal™ has been compared on a subjective basis over a very short period on Baoer Street in Beidaihe. Testing equipment was brought to the site for comparison on a more disciplined, objective basis included the following tests.

- Skid Resistance
- Water Penetration
- Macrotexture (Depth of Texture)

At a later date, cores will be acquired from the asphalt pavement for laboratory testing and the following properties of the asphalt pavement will be determined:

- Viscosity
- Ductility
- Penetration
- Softening Point

4.2 Skid Resistance

A British Pendulum (ASTM Standard E303-93 OR China Standard T 0964-95) was employed to determine the skid resistance of the road surface prior to the application of RJSeal™ and also after the application.

Test Results from the British Pendulum Testing are contained in the table that follows:

Table 4.3			Results from the British Pendulum Tests				
						British Pendulum #	
Street	Loc'n	Date	Lane	Wheel Path	Traffic Direct'n	Before RJSeal™	After RJSeal™
Baoer	K100+220	1 June	Fast	Right	Northbound	46	n/a

The test results from the British Pendulum are not directly correlatible with the sand patch test. A BPN of 42 is indicative of an acceptable road surface from a skid resistance point of view.

See figure 4.5 for a photo of the British Pendulum testing at the demonstration site

Figure 4.5 British Pendulum

4.3 Water Penetration

Water Penetration Tests (China Testing Standard T 0730-2000) were undertaken at several locations on the untreated portion of the street, in close proximity to the test strip and later on the RJSeal™ treated section, in close proximity to the British Pendulum tests.

Table 4.4			Results from the Water Penetration Tests				
						Water Inflow ml/min	
Street	Loc'n	Date	Lane	Wheel Path	Traffic Direct'n	Before RJSeal™	After RJSeal™
Baoer	K100+220	June 1	Fast	Right	northbound	5	n/a

See Figure 4.6 that follows for a pictorial presentation of the Water Penetration Meter.

4.4 Macrotexture (Depth of Texture)

The sand patch test (ASTM Standard E965-96 OR China Standard T 0961-95) was used to ascertain the Pavement Macrotexture Depth. Comparison was undertaken at several locations on both the untreated and RJSeal™ treated sections. The results of the testing are documented in the table that follows:

Table 4.5			Results from the Sand Patch Tests				
						Depth of Structure (mm)	
Street	Loc'n	Date	Lane	Wheel Path	Traffic Direct'n	Before RJSeal™	After RJSeal™
Baoer	K100+220	June 1	Fast	Right	Northbound	0.49	n/a

See Figure 4.7 which follows, showing the sand patch testing procedure.

Figure 4.6 Water Penetration Test

Figure 4.7 Sand Patch Test

4.5 Ductility/Viscosity/Penetration Testing

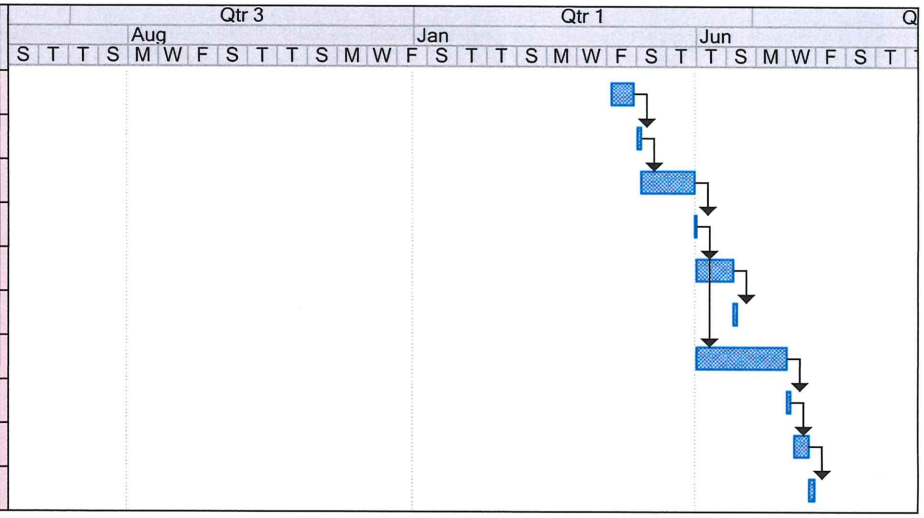
This aspect of the testing is beyond the capabilities Crown Capital Enterprise Limited personnel and external assistance has been sought from outside experts in the field of Asphalt Testing. To this end, the Qinhuangdao's Civic Construction Department will retain an independent testing company to conduct tests on the treated section. This will be reported separately.

5.0 Test Completion Schedule

Technicians from the independent testing agency will be dispatched to undertake further testing on the trial sections in the near future. The projected completion of this testing is scheduled as shown in the following chart.

LiveProject - Beidaihe Baoer Stretet

ID	Task Name	Duration	Start	Finish	Predecessors	Successors
1	Negotiate Contract for Application	10 days	17/4/2006	28/4/2006		2
2	Mobilization	2 days	1/5/2006	2/5/2006	1	3
3	Work in QinHuangnDao	21 days	3/5/2006	31/5/2006	2	4
4	Application in Beidaihe	1 day	1/6/2006	1/6/2006	3	7, 5
5	Data Preparatin & Transmittal	14 days	2/6/2006	21/6/2006	4	6
6	Report Preparation	2 days	22/6/2006	23/6/2006	5	
7	Hiatus	34 days	2/6/2006	19/7/2006	4	8
8	Field Testing & Core Sample Acquisi	2 days	20/7/2006	21/7/2006	7	9
9	Core Sample Testing	6 days	24/7/2006	31/7/2006	8	10
10	Report Preparation & Submission	3 days	1/8/2006	3/8/2006	9	



Task is on time	A pending suggestion exists	A suggestion was rejected
Task is delayed	Pending suggestion has a conflict	There was an error while updating Project file
Task is complete	A suggestion was accepted	

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APPENDICES

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Appendix A

RJSeal™ Descriptive Literature

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Appendix B

Desco D200 Sprayer
Technical Specifications

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Figure 5.0 Project Completion Schedule